Advanced system designed to enable outstanding, cost-effective deployment versatility

IBM System Storage N3000 Express series Modular Disk Storage Systems

Highlights

- ***High availability—Takes advantage of proven features including a high performing and scalable operating system, data management software and redundancy features***
- ***Backup and recovery features—Designed to support disk-based backup, with file or application-level recovery with Snapshot™ and SnapRestore® software features***
- ***Simple replication and disaster recovery—Designed to provide easy-to-deploy mirroring solution that is highly tolerant of WAN interruptions***
- ***Management simplicity—Self-diagnosing systems designed to enable on-the-fly provisioning***
- ***Versatile—Single, integrated architecture designed to support concurrent block I/O and file serving over Ethernet and Fibre Channel SAN infrastructures***

The promise of scaling out a data center with small, low-cost servers has led to an unintended consequence—"stranded storage" from internal disks or directly attached storage (DAS) solutions. IT professionals today are overwhelmed by the amount of data they have to manage. They are challenged by the need to keep pace with their companies' growing business, improve backup and restore effectiveness, implement disaster recovery solutions and not overwhelm their IT staff—often on a shoestring budget.

The IBM N3000 Express systems are designed to provide primary and secondary storage for midsize enterprises. Consolidating all of their fragmented application-based storage and unstructured data into one unified, easily managed and expandable platform can help IT generalists increase their effectiveness. N3000 Express systems offer integrated block-level and file-level data

access, intelligent management software and data protection capabilities—such as higher-end N series systems—in a cost-effective package. IBM N3000 Express series innovations include internal controller support for Serial-Attached SCSI (SAS) or SATA drives, expandable I/O connectivity and onboard remote management.

The IBM N3000 Express is compatible with the entire family of N series unified storage systems, which feature a comprehensive line-up from top-to-bottom of hardware and software designed to address a variety of possible deployment environments.

The N3300 Express squeezes 12 TBs of internal raw capacity into a 2U enclosure and optional external expansion that can increase total system raw capacity to 68 TBs. The N3600 Express scales up to 20 TBs of internal raw capacity and can scale up to 104 TBs by supporting up to 104 disk drives. Whether for primary or secondary storage use, the N3000 Express systems are intended to provide outstanding deployment versatility and connectivity to help satisfy your data protection and recovery needs.

Easy to use

IBM N3000 Express systems offer versatility via unified file and block storage—CIFS, NFS, iSCSI and FC protocols are supported—and can be used as primary or secondary storage. These systems are designed to address storage consolidation challenges as well as application server virtualization projects. With Data ONTAP®, the N3000 Express systems offer the ability to use storage efficiently by helping increase utilization through thin provisioning (FlexVol® and FlexClone®) and reduce storage space requirements with Snapshot technology.

Higher business uptime

The N3000 Express systems support dual-controller configuration with automated active-active failover. Using the IBM N series SnapSuite™ of manageability software, multipath high availability for business continuity, and intelligent data protection and disaster recovery software, the N3000 Express systems are intended to help keep your business running smoothly.

Designed to help keep costs low

The N3000 Express systems are designed as the entry point to the entire N series family. The systems provide multiple I/O connectivity options, a small footprint to hold high density SAS or SATA drives, and external expansion using low-cost SATA drives and Fibre Channel disks for production applications, and utilize Data ONTAP Snapshot technology. The systems are truly versatile products that can be deployed to address some of the most demanding application environments. For further systems administration time and cost

advantages, the N3000 Express systems come standard with Remote Onboard Management capabilities to help simplify remote system monitoring, cycle power, execute firmware upgrades, enter console commands and run diagnostics to help maintain the reliability of the system and your business-critical data.

Highly flexible, unified storage solution

The IBM System Storage™ N3000 Express series is designed for a broad range of deployment scenarios. The N3000 Express supports Ethernet and Fibre Channel environments, enabling economical NAS, FC and iSCSI deployments. The N3000 Express system functions as a "unification engine," which is designed to enable you to simultaneously serve both file-level and block-level data across a single or multiple networks—demanding procedures that for some solutions require multiple separately managed systems. The flexibility of the N3000 Express allows it to address the storage needs of a wide range of organizations, including distributed enterprises and data centers for midrange enterprises. The N3000 Express also supports sites with computer-intensive and data-intensive enterprise applications such as database, data warehousing, workgroup collaboration and messaging.

Affordable data protection for distributed enterprises

N3000 Express storage systems can offer significant advantages for distributed enterprises with remote and branch office sites. These organizations and others can use the SnapVault® and SnapMirror® software functions to implement a cost-effective data protection strategy by mirroring data back to a corporate data center. N3000 Express systems can help improve data availability and simplify backup and restore operations by implementing centralized backup via a single methodology. This helps reduce tape management requirements and the need for remote systems administration. Recovering data backed up on IBM System Storage N3000 Express systems can be faster than recovering from tape.

Support for low TCO and long-term investment protection

N3000 Express systems support a low TCO with an affordable price point, easy installation and configuration and ease of ongoing maintenance. Standardization on the IBM System Storage N series unified storage architecture can help your organization take advantage of staff IT skills and reduce complexity. The innovative design of the N3000 Express results in a small form-factor appliance that conserves scarce and valuable space in data centers or remote office locations. In addition, the ability to support unified storage networks enables you to make the most of your current network investment while deploying a long-term, highly scalable and easily upgradeable storage solution.

Specifications				
	N3300 Express	**N3300 Express**	**N3600 Express**	**N3600 Express**
Machine type model	**2859-A10**	**2859-A20**	**2862-A10**	**2862-A20**
Controller configuration	Single	Dual (active/active)	Single	Dual (active/active)
Random access memory	1 GB	2 GB	2 GB	4 GB
I/O Ports (Standard/Maximum)				
Fibre Channel ports (speed)	2(4 Gbps)	4(4 Gbps)	2(4 Gbps)	4(4 Gbps)
Ethernet ports (speed)	2(1 Gbps)	4(1 Gbps)	2(1 Gbps)	4(1 Gbps)
Storage Scalability				
Maximum raw capacity	68 TB	68 TB	104 TB	104 TB
Maximum number of disk drives	68	68	104	104
Maximum volume size	16 TB	16 TB	16 TB	16 TB
Maximum number of volumes/LUNs	1024	1024	1024	1024
Disk drives supported in controller (size, type, speed)	SAS: 300 GB, 10,000, 15,000 rpm; 450 GB, 15,000 rpm SATA: 500 GB, 7,200 rpm; 750 GB, 7,200 rpm, 1 TB			
Disk expansion units supported	EXN4000 - 4 Gbps Fibre Channel Disk Storage Expansion Unit: 4-Gbps Fibre Channel: 300 GB, 10,000, 15,000 rpm; 450 GB, 15,000 rpm 2-Gbps Fibre Channel: 300 GB, 10,000, 15,000 rpm; 450 GB, 15,000 rpm EXN1000 - SATA Disk Storage Expansion SATA: 500 GB, 7,200 rpm; 750 GB, 7,200 rpm, 1 TB			

Software

Operating System	Data ONTAP	
Operating Systems Supported	Windows 2000, Windows Server® 2003, Windows XP, Linux, Sun Solaris, IBM AIX®, HP-UX, Mac OS, VMware ESX	
Software Features	**Standard**	**Licensed**
	Integrated RAID manager, including RAID-DP	CIFS
	Snapshot	NFS
	Fast Boot	HTTP
	NIS	iSCSI
	DNS	FCP
	FilerView®	FlexCache™
	FlexVol	FlexClone
	FlexShare	MultiStore
	Network Data Management Protocol (NDMP)	Clustered Failover
		SnapLock®
		SnapMirror
		SyncMirror®
		SnapRestore
		Single Mailbox Recovery
		SnapVault
		SnapMover
		NearStore
		Advanced Single Instance Storage
		SnapValidator
		Manageability Software
		Application Suite
		SnapManager for Microsoft Exchange
		SnapManager for Microsoft SQL Server®
		SnapManager for Microsoft Office SharePoint®
		SnapManager for Oracle
		SnapManager for SAP®
		SnapManager for Virtual Infrastructure
		Server Suite
		SnapDrive
		Virtual File Manager – Enterprise Edition
		Virtual File Manager – Migration Edition
		Storage Suite
		Protection Manager
		Provisioning Manager
		File Storage Resource Manager
		Operations Manager

See **ibm.com**/systems/storage/network/n3000/appliance/features.html for an overview of the N3000 Express series software features, functions and benefits.

For more information

Contact your IBM representative or IBM Business Partner, or visit:

ibm.com/systems/storage/network/

For N3000 Express series modular disk storage system technical specifications and optional adapters available, please visit:

ibm.com/systems/storage/network/n3000/appliance

For N3000 Express series interoperability, visit:

ibm.com/systems/storage/network/interophome.html

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MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated. Some numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology.

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